

NITINOL ALLOY DESIGN FOR SHEATH DEPLOYABLE AND RE-SHEATHABLE VASCULAR DEVICES

Abstract of the Disclosure

[00084] An embolic protection device that employs a superelastic alloy self-expanding strut assembly with a small profile delivery system for use with interventional procedures is disclosed. The expandable strut assembly is covered with a filter element and both are compressed into a restraining sheath for delivery to a deployment site downstream and distal to the interventional procedure. Once at the desired site, the restraining sheath is retracted to deploy the embolic protection device, which captures flowing emboli generated during the interventional procedure. The expandable strut assembly is made from a superelastic alloy such as nickel-titanium or nitinol, and includes a ternary element in order to minimize the stress hysteresis of the superelastic material. The stress hysteresis is defined by the difference between the loading plateau stress and the unloading plateau stress of the superelastic material. The resulting delivery system including the restraining sheath has a small profile and has a thin wall.

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